

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number  
WO 03/089008 A1

- (51) International Patent Classification<sup>7</sup>: A61K 47/36, 47/40, 47/18, 9/70, 9/20 21, CH-8273 Triboltingen (CH). SCHOCH, Christian [CH/CH]; Lindenweg 15, CH-4132 Muttenz (CH).
- (21) International Application Number: PCT/EP03/04076 (74) Agent: GROS, Florent; Novartis AG, Corporate Intellectual Property, CH-4002 Basel (CH).
- (22) International Filing Date: 17 April 2003 (17.04.2003) (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LT, LU, LV, MA, MD, MK, MN, MX, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SE, SG, SK, TJ, TM, TN, TR, TT, UA, US, UZ, VC, VN, YU, ZA, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02008809.2 19 April 2002 (19.04.2002) EP (84) Designated States (*regional*): Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).
- (71) Applicant (*for all designated States except AT, US*): NOVARTIS AG [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH).
- (71) Applicant (*for AT only*): NOVARTIS PHARMA GMBH [AT/AT]; Brunner Strasse 59, A-1230 Vienna (AT).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): SZENTE, Lajos [HU/HU]; Gombocz Z. u. 17., H-1118 Budapest (HU); SZEJTLI, Jozsef [HU/HU]; Rakos u.8., H-1028 Budapest (HU); KIS, György, Lajos [CH/CH]; Keberlistrasse
- Published:  
— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 03/089008 A1

(54) Title: NOVEL BIOMATERIALS, THEIR PREPARATION AND USE

(57) **Abstract:** The present invention relates to novel materials, particularly biomaterials, in form of a precipitate, comprising at least an anionic polymeric component which is as such soluble in water and an amphiphilic ammonium-type component, which precipitate is obtainable by a process including the following steps: contacting the anionic polymeric component and an cyclodextrin component in an aqueous medium, and adding to the mixture obtained in step 1 said amphiphilic ammonium-type component, wherein said components are present in amounts effective to form said precipitate, and preferably to corresponding precipitates additionally comprising said cyclodextrin component. Both types of precipitates may optionally comprise one or more further components. The precipitates are particularly useful as controlled-release depot formulations suitable for long-lasting delivery of said further components. The further components incorporated into the precipitates can be pharmaceutical compounds, pesticides, agrochemicals, colorants, diagnostics, enzymes, foodstuffs etc.